Amendments to the Claims

1. (currently amended) A method for processing a compressed input video, comprising:

decoding the compressed input video to produce pixels of an interlaced picture, the interlaced picture having a first spatial resolution, and a top-field and a bottom-field;

producing, for each macroblock of pixels in the ~~interface~~ interlaced picture, a macroblock coding type, in which the macroblock coding type includes a macroblock motion type and a macroblock transform type;

filtering adaptively ~~while downsampling~~ the top-field and the bottom-field of the interlaced picture according to the macroblock coding type and the macroblock transform type to produce a progressive picture with a second spatial resolution less than the first spatial resolution, in which the filtering ~~and the downsampling is performed jointly~~ jointly performs de-interlacing and downsampling of the interlaced picture; and

encoding the progressive picture.

2. (canceled)

3. (previously presented) The method of claim 1, in which the macroblock coding type includes intra-coding and inter-coding.

4. (previously presented) The method of claim 1, in which the macroblock transform type includes a frame-based transform and a field-based transform.

5. (previously presented) The method of claim 1, in which the macroblock coding type further includes a macroblock motion type and corresponding motion vector when the macroblock coding type is inter-coding.

6. (original) The method of claim 5, in which the macroblock motion type includes frame-based and field-based.

7. (original) The method of claim 1, in which the filtering includes frame-based filtering and field-based filtering.

8. (original) The method of claim 7, in which the filtering is field-based when the macroblock coding type is inter-coding and the macroblock motion type is field-based.

9. (previously presented) The method of claim 7, in which the filtering is field-based when the macroblock coding type is inter-coding, the macroblock motion type is frame-based, and an absolute value of motion vectors corresponding to the macroblock are less than a threshold.

10. (original) The method of claim 9, in which the threshold equals zero.

11. (original) The method of claim 9, in which the threshold is greater than zero.

12. (original) The method of claim 7, in which the filtering is field-based when the macroblock coding type is intra-coding and the macroblock transform type is field-based.

13. (original) The method of claim 7, in which the filtering is frame-based when the macroblock coding type is intra-coding and the macroblock transform type is frame-based.

14. (previously presented) The method of claim 7, in which the filtering is frame-based when the macroblock coding type is inter-coding and the macroblock motion type is frame-based, and an absolute value of motion vectors corresponding to the macroblock are greater than or equal to a threshold.

15. (original) The method of claim 7, in which the filtering is frame-based and operates on input samples from the top-field and bottom-field of the interlaced picture.

16. (original) The method of claim 7, in which the filtering is field-based and operates on input samples from the top-field or bottom-field.

17. (original) The method of claim 7, in which the filtering is field-based and operates on input samples from the bottom-field.

18. (previously presented) The method of claim 1, in which the encoding compresses the progressive picture.

19. (original) The method of claim 1, further comprising:

rendering the progressive picture on a display device.

20. (currently amended) A system for processing a compressed input video, comprising:

means for decoding the compressed input video to produce pixels of an interlaced picture, and producing, for pixels of each macroblock, a macroblock coding type, in which the macroblock coding type includes a macroblock motion type and a macroblock transform type, the interlaced picture having a first spatial resolution, and a top-field and a bottom-field; ~~and~~

means for ~~filtering, adaptively, while downsampling~~ filtering adaptively the top-field and the bottom-field of the interlaced picture according to the macroblock coding type and the macroblock transform type to produce a progressive picture with a second spatial resolution less than the first spatial ~~resolution;~~ resolution, in which the filtering jointly performs de-interlacing and downsampling of the interlaced picture; and

an encoder configured to compress the progressive picture.